

DP-309304

ROTARY POSITION SENSOR

ABSTRACT OF THE DISCLOSURE

- A rotary position sensor (200) includes a magnet assembly (200') having first and second poles (26, 28), a nonuniform magnetic field (B'') in a working air gap (22'') between the poles, and an axis of rotation (A, A', A'').
- 5 A magnetosensitive device (24'') is located within the working air gap (22'') at a first selected distance (X, Y, Z) from the axis of rotation (A, A', A''). For a given range of motion, the magnetosensitive device (24'') is subjected to a progressively increasing magnetic flux density (R, R'). The component of the output signal due to this increasing flux density is additive to the component due
- 10 simply to rotation of the magnetic field (B'') about the magnetosensitive device (24''), effectively reducing the total output signal's deviation from linearity. Alternatively, a magnet assembly (300') includes a pair of pole pieces (310, 312) and a nonuniform magnetic field (B''') in a working air gap (22''') between the pole pieces (310, 312). A magnetosensitive device (24''') is
- 15 located within the working air gap (22''') at a first selected distance (X') from the axis of rotation (A''').